

CLAIMS

1. A process for the preparation of a Group 4 metal amide complex comprising a monovalent or divalent Lewis base ligand the steps of the process comprising contacting a Group 4 metal amide with a neutral source of a monovalent or divalent, Lewis base ligand group and a solid Lewis acid scavenging agent under amine elimination conditions to form a Group 4 metal amide complex containing at least one less amide group per metal moiety than the initial Group 4 metal amide.

2. The process of claim 1 wherein the Group 4 metal amide corresponds to the formula, $M(NR_2)_mX_n$,

10 wherein M is a Group 4 metal;

R independently in each occurrence is a C_{1-20} hydrocarbyl group, a C_{1-20} halohydrocarbyl group, or two R groups are joined together thereby forming a divalent derivative;

X is an anionic ligand of up to 20 atoms not counting hydrogen or two X groups are joined together thereby forming a divalent derivative;

m is an integer from 1 to 4; and

n is an integer equal to 4-m.

3. A process according to claim 2 wherein each X group is hydride, halide, or a hydrocarbyl-, silyl-, hydrocarbyloxy- or siloxy- group of up to 10 atoms

20 4. A process according to claim 3 wherein each X is chloride or methyl.

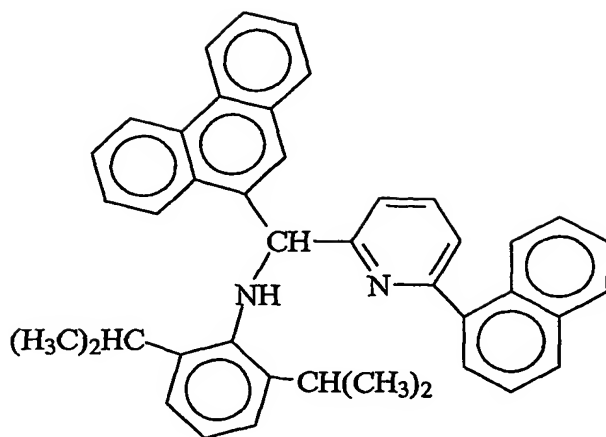
5. A process according to any one of claims 1-4 wherein M is hafnium.

6. A process according to any one of claims 1-4 wherein the Group 4 metal amide is a Group 4 metal tetrakis(N,N-dihydrocarbyl)amide.

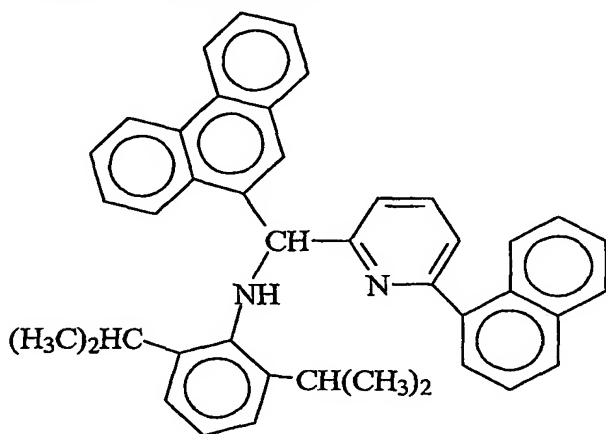
7. A process according to claim 6 wherein the Group 4 metal amide is a Group 4 metal tetrakis(N,N-dimethyl)amide.

8. A process according to claim 8 wherein the Group 4 metal amide is hafnium tetrakis(N,N-dimethyl)amide.

9. A process according to any one of claims 1-4 wherein the neutral source of a monovalent or divalent, Lewis base ligand group is:



10. A process according to claim 5 wherein the neutral source of a monovalent or divalent, Lewis base ligand group is:



5 11. A process according to any one of claims 1-4 wherein the solid Lewis acid scavenging agent is employed in excess based on quantity of Group 4 metal amide.

12. A process according to claim 11 wherein the solid Lewis acid scavenging agent is alumina.

10 13. A process according to claim 5 wherein the solid Lewis acid scavenging agent is employed in excess based on quantity of Group 4 metal amide.

14. A process according to claim 13 wherein the solid Lewis acid scavenging agent is alumina.